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NORTHERN PLANT NOVELTIES FOR 1942

Department of Horticulture, South Dakota State College
and Agricultural Experiment Station
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This department does not conduct a commercial nursery, but propagates and distributes new varieties, either originated in this department or imported. Improvement in size and quality has been observed each year since 1895 in the many acres of seedling fruits. The work has been honored by extensive propagation and planting of many of the new varieties, all originated or improved by Dr. N. E. Hansen.

Many new seedling fruits, roses, other ornamentals and vegetables are coming on, which will be distributed when ready. Some of the material in this list is offered primarily for distribution to plant-breeders to help in the work of improving hardy fruits and ornamentals elsewhere.

Terms: Terms are cash with order. For South Dakota orders add two percent for State Retail Sales Tax. The money received makes it possible to do the work on a larger scale than would otherwise be possible. It is important to order promptly, as the supply of plants is limited. Orders for scions should be received early, by March first if possible.

Special Notes:

1. There are no propagation restrictions on any of these new varieties.
2. Experiment Stations can obtain adequate support for research work only if proper credit is given for all successful experiments. Giving due recognition to the source of any horticultural novelty will aid the nurseryman as well as the originator. To conceal the source, hurts both.
3. Experiment stations, nurserymen, and others who have facilities for experiments with fruits on a large scale can send for a miscellaneous nursery surplus list of fruits and ornamentals.

THE FOLLOWING VARIETIES ARE OFFERED FOR THE FIRST TIME

1. A redflesh apple of commercial size.
2. A hardy double thornless red rose.
3. & 4. Two new hardy pears resistant to fire blight.
5. A red crabapple following Dolgo in season.
6. A dwarf Siberian crabapple, bearing fruit at five feet.
7. Two 3-species crabapples.
8. A red all-winter crabapple.

A RED-FLESH APPLE OF COMMERCIAL SIZE

Almata apple. Offered for the first time. Fruit a solid brilliant red; form round conical, truncated, regular. Flesh bright red throughout, juicy pleasant subacid. Season probably winter. In 1941, the first year of bearing, the fruit of Almata was 2 3/8 inches across by 2 inches deep. Pedigree: (Beautiful Arcade apple x Fluke No. 38 crab) x Redflesh crab apple pollen. One year trees of Almata apple on Siberian Crab stocks were sent out for preliminary trial spring 1938, before the original tree had fruited. (Almata: from Alma Ata, Kazakstan, home of the Redvein).

Apples with red flowers skin and flesh will be useful both as an ornamental tree on the lawn and for fancy fruit in the orchard. The fruit is red and is good for red sauce and red jelly.

Several years ago I asked John Robertson of Hot Springs, who was testing the Redflesh crab, as to the value of an apple that was red inside. Mr. Robertson said such an apple would outsell any other apple in its season. Mr. Robertson also remarked that the size of crabs and apples produced under orchard conditions was about one-third larger than that recorded for them in crowded plantations of the original seedlings.

Price: Only scions of Almata apple are available for spring 1942, per foot, $1.00

Zitkala: A Hardy Double Thornless Red Rose. Offered for the first time. The wood is smooth except for some weak bristles and avery few small thorns near the base of the main shoots. Not quite a Pax rose as the Pax roses should be quite thornless. Flowers a brilliant velvety red, nearly three inches across; with 25 petals. A typical Rosa blanda plant of strong upright habit with red bark. After many years this is the first "break" away from the light lavender pink of the wild rose. In other words to get the blue out of the red.

(Zitkala: The Teton Sioux Indian for "bird." Pronounce both "a's" as in "father"). Pedigree: Rosa blanda (from Bonanza Springs, western Minnesota, on the east shore of Bigstone Lake) x pollen of the Amadis (or Crimson Boursault), an old English rose with deep crimson-purple flowers.

Price: Only 6-root sprouts available of Zitkala rose from the original plant, each $10.00.

NEW HARDY PEARS

The season 1941 was marked by an excellent crop of pears. This work of originating pears immune or strongly resistant to blight yields results year by year. The plan is to combine in one tree the blight immunity of the East Siberian and North China pears, with large size and choice quality of the European standard pears, especially the winter-hardy Russian varieties. Two of the best this season 1941 were the Selo and Nikto.

Selo pear. Offered for the first time. Pedigree: Pyrus Sinensis (R. & K. 453) x Pyrus ovoidea (Simoni) pollen. The Sand pear (R. & K. 453) were brought from Russia by N. E. Hansen, and names Russian Sand Pear. Pyrus ovoidea is from China through the Arnold Arboretum. Fruit 2 x 2½ inches, globular acute pyriform, clear yellow, with a multitude of minute dark russet dots. Flesh white, tender, melting. A good eating pear. (Selo: the Russian for "village"). Tree productive. Scions per foot, $1.00.

Nikto Pear. Offered for the first time. Pedigree: The French pear Marguerite Marillat x Pyrus ovoidea of North China. Fruit 1 3/4 inches across, yellow, globular, obtuse pyriform, juicy pleasant slightly subacid, quality good. A very heavy crop in 1940. (Nikto: the Russian for "no one"). Scions per foot, $1.00.

S. D. MILO CRABAPPLE

Offered for the first time. A hybrid Siberian crabapple following Dolgo in season and of equally brilliant red color.

Fruit regular oblate, 1 3/8 inch across. Skin polished solid crimson with heavy blue bloom, sprinkled with few scattered large yellow dots. Flesh tender, white, juicy, sprightly subacid, cooks quickly into bright red sauce. The flesh is often tinted with red outside core line. The skin is so intensely red that the color is imparted to the sauce. This should be a good market crab. Scions per foot, $1.00.

TOLSTEME CRABAPPLE

Offered for the first time. A Siberian crabapple received from Ivan Mitchurin in the 1934 tour of Russia. That year Ivan Mitchurin celebrated his sixtieth anniversary as the originator of new fruits, and the occasion was a national holiday. It was a great joy and inspiration to me to attend this celebration at the home place, Mitchurinsk (Koslov on the old maps). Tolsteme is of special interest to fruit breeders because of its habit of bearing fruit freely at five feet in height. Fruit about one inch across, red over yellow, juicy, sprightly acid. Scions per foot, $1.00.

INTERNATIONAL OR THREE-SPECIES APPLES

This refers to the seedlings produced at this station combining the apples of three continents: Pyrus Ioensis of North America, Pyrus Malus of Europe, and Pyrus baccata of Siberia, northern Asia. The plan is to combine the long winter keeping of the American wild crab with the large good quality fruit of the standard European cultivated apple, and the winter-hardiness of the Siberian crab. The varieties have the group names Trio, indicating three species. See 339. The following two are now added:

Lee Trio: Offered for the first time. Pedigree: Hamilton Morning Sun; Iowa wild crab x Pyrus baccata pollen. Fruit 1½ inches across. Oblate, yellow bronze red, striped and mixed. Flesh white, moderately juicy, sweet; cooks into pleasant sweet sauce. Scions per foot, 50 cents.

Max Trio: Offered for the first time. Pedigree: Mercer wild crab x Pyrus baccata pollen. Fruit 1 9/16 inches across, round, truncated, mostly covered with striped and mixed red. Flesh pleasant sweet subacid; cooks up very easily into excellent sauce. Season late. Scions per foot, 50 cents.

A RED ALL-WINTER CRABAPPLE

South Dakota Winter crabapple. Offered for the first time. Pedigree: Redvein apple (Pyrus Malus Niedzwetzkyana) x Elk River, Minnesota, native wild crab pollen. Fruit round, truncated, 1 3/4 inches, obscurely angular, light solid red without stripes or splashes. Flesh white, juicy, pleasant sweet subacid with no acerbity. After hardy freezing, the fruit retains its firmness and makes a good pleasant flavored sauce. The slices retained their shape in cooking. Before freezing, bruised fruits remained unchanged a long time. A true hybrid: The Redvein is dominant in skin color and mild flavor; the Elk River is dominant in firm flesh, in cylindrical tube and marginal stamens, and above all in long winter-keeping. Apparently the S. D. Winter is a real all-winter crabapple that will find a welcome where extreme hardiness is necessary. Scions per foot $1.00.

THE HANSEN BUSHCHERRY, 15TH GENERATION

The work improving the native Hansen Bushcherry (Prunus Besseyi) began in 1895. Plants of the fifteenth generation under cultivation were grown in 1941 ready for transplanting this spring. Some will remain for fruiting this year. Out of 37 acres of seedlings of the fourteenth generation, about one thousand plants were saved and

planted in a reserve plantation. (See S. D. 224, 309, 339). Plants vary from seed but they will all be valuable for preserves and sauce, also as an ornamental shrub. One-year seedling plants of the Hansen Bushcherry of the fifteenth generation, two for $1.00.

FIVE HARDY NURSERY UNDERSTOCKS FOR FRUITS

Three dwarfing stocks are offered; for apples, for plums and for apricots. Also one standard stock for select chokecherries.

Dwarf stocks for fruit trees are desirable in many cases; they cause earlier bearing due to the checking of the downward flow of elaborated sap. Also larger size. In europe they are used extensively; in our eastern states they are increasing in importance. Sometimes several varieties are grown as one tree. In the prairie West fruit trees of lower growth are desirable because of greater resistance to surface windsweep, and for greater convenience in spraying, picking, and pruning.

1. HANSEN HARBIN: A Hardy Semi-Dwarf Stock for Apples

In all commercial apple growing sections of the United States, it has become desirable to obtain dwarf or semi-dwarf so that trees will come into bearing earlier, and be a smaller size for greater convenience in spraying. The experimental work of Hatton in England is of great importance in mild climates but does not help the Prairie Northwest where all these selected stocks are not sufficiently hardy. The principle, however, still remains. The problem of root-killing is highly important because the winter-killing of tender stocks leaves the orchard trees without roots. The trouble with the mixed seed of commercial varieties of apples is the great variability. Vegetative propagation is difficult in the western prairie climate. One solution of this problem may be the Manchurian crab, (Pyrus baccata var., Mandshurica, Maxim), gathered by the writer in the mountain region, about 50 miles east of Harbin, Manchuria, in 1924. (See S. D. Bulletin 339).

The words Manchurian crab should not be used without the qualifying (Harbin, N. E. Hansen, 1924 importation). A good brief name would be Harbin as it would also indicate the source and origin. A 50° below zero region. The mature trees are about 12 feet high, about 12 feet across, and of bushy habit, heavy annual bearers.

The advantages are as follows:

1. In the larger crabs the fruit is too valuable for market to be used for production of seedling stocks. Seedlings of mixed Siberian crab and hybrids are all hardy, but variable. The fruit is marketable and hence is less likely to be saved for seed.
2. Mixed seed of standard northern apples, are highly variable in winter-hardiness and more or less subject to root-killing.
3. In this Harbin lot the fruit is 3/8 to 1/2 inch across, about 1,650 fruits to a pound. The seedlings are good for budding and make strong trees in nursery; they are now in commerce.
4. A point of great importance: The fruits are too small for codling moth, hence none are wormy. The fruit runs about 10 percent clean seed.
5. These Harbin (Hansen 1924) seedlings run very uniform in growth of tree and in character of fruit. For all practical pruposes they will be as uniform as the Hatton selections made in England of Doucin and French Paradise stocks, which are propagated from trench-layers.
6. The principle will be the same; the downward flow of elaborated sap is checked, this tends to turn wood buds into blossom buds.
7. It is hoped that nurserymen will start orchards to grow their own seedlings of this stock to prevent root-killing and to cause earlier bearing.

Price: Hansen Harbin crabseedlings, one-year old, $2.00 per 100.

2. A DWARF STOCK FOR THE MANCHU APRICOTS

The Siberian apricot Prunus Siberica should be tested as a nursery understock for the hardy Manchu apricot. In budding in the nursery the union is apparently perfect. It should cause earlier bearing as it is more dwarf in growth than the tall-growing Manchu apricots. In addition it has much ornamental value as the small trees are full of white to light pink blossoms in the early spring.

The Siberian apricot was collected by Dr. N. E. Hansen in two places in Northeast Asioa. The Shilka Siberian apricot is from Shilka East Siberia, an area with a minimum low winter temperature of -67°. The Mendo Siberian apricot is from Mendochina, North Manchuria, in the great Khingan Mountains, around -50°F.

The Siberian apricot, a distinctly different species from the Manchu apricots as distributed from this station in 1937, is an interesting ornamental shrub or small tree, around ten feet high and ten feet across; leaves round, ovate, long pointed; the abundant fruit is inedible, the flesh splitting into two leathery parts. Linnaeus named it Prunus Siberica; later authors classify it as a subspecies of the common apricot, Prunus Armeniaca, Linn. var. Sibirica, Koch. Prunus Sibirica seedlings Shilka and Mendo, five for $1.00.

3. A DWARF STOCK FOR THE PLUM

The sand cherry Prunus Besseyi makes a good stock for the hybrid plums of low growth such as Opata and Sapa, but for tall growing trees there is some danger from lopping over of the trees as they come into bearing.

Perhaps the seedlings of the Western South Dakota plum as represented by Oacoma may serve a good purpose as a dwarf stock. Seedlings, one year old, 100 for $3.00.

4. A STANDARD STOCK FOR THE MANCHU APRICOT

The Manchu apricots (see Bul. 309) brought by Dr. N. E. Hansen from North China (Manchuria) are good annual bearers equal in quality to the market apricots but smaller in size. The Manchu apricots are of strong growth, over twice that of plums and ripen ahead of plums. Coming from 50 degree below zero (Fahrenheit) are hardy up into Canado.

Seedlings of the Manchu apricots will endure 50 degrees below zero Fahrenheit and may be expected to be the ultimate stock for the North. One of the seedling Manchu apricots bore six bushels of fruit in one season.

The native plum (Prunus Americana) was the only stock available at first, but the apricot tends to overgrow the plum root and to break off at the point of union. It helps to stake such trees to ease the strain.

One-year seedlings of Manchu apricot, 4 for $1.00.

5. A NONE-SUCKERING STOCK FOR SELECT CHOKECHERRIES

Native chokecherries of good quality free from "choke" are in existence. They need only to be collected. Two such selections are noted in Bul. 224. Better ones have appeared since that time, and in due time will come into cultivation. The main difficulty is the strong root-suckering habit which is decidedly objectionable. The best stock for budding is the May Day tree (Prunus Padus commutata) from East Siberia. The chokecherries on this stock make a strong 5 to 6 foot growth the first year. The May Day is free from root-suckering.

Some May Day trees should be planted by nurserymen to provide stocks for future use. One-year seedlings to line out for budding, 5 for $1.00.

FOUR PRIMITIVE SPECIES OF THE PEAR

The pear is not a native of America. The species of interest to us are from Europe and Asica, especially Siberia and North China. The following four species are offered as one and two-year-old seedlings, and are interesting especially as ornamental trees and for breeding winter-hardy pears resistant or immune to the destructive bacterial disease known as fire-blight. (See S. D. Bul. 224).

1. Harbin Pear (Pyrus Ussuriensis). The hardy winter pear collected in the Harbin region, North China, by Dr. N. E. Hansen 1924. One-year seedlings, two, for $1.00.

2. Russian Sand Pear. This is Pyrus Sinensis (R. & K. 453) received from Russia has borne abundant fruit for many years. Fruit medium in size, and good for culinary use, also for eating when fully ripe. One-year seedlings, two for $1.00.

3. Saponsky Ussuriensis Pear. Saponsky Ussuriensis pear, native of Saponsky, east Siberia. (See S. D. Bul. 224). Very hardy and free from fire-blight. Leaves nearly round. Valuable for hybridizing and as ornamental trees. Two-year old seedlings, two for $1.00.

4. Pyrus Ovoidea Pear. This North Chinese pear has borne fruit many years at this station. (See S. D. Bul. 224). Originally for the Arnold Arboretum as Pyrus Simonii. The bright scarlet leaves in autumn are attractive. Fruit a small pear, one and 5/8 inches in diameter, sweet, juicy and of fair quality. Not quite as hardy as the Harbin and Saponsky (Pyrus Ussueiensis) pears. Two-year seedlings of Pyrus ovoidea, two for $1.00.

3. [illegible]

The [illegible] growth [illegible]

[illegible]

4. [illegible]

[illegible]

[illegible]

[illegible]

[illegible] Canada [illegible]

[illegible]

FOUR PRIMITIVE SPECIES OF THE PEAR

The Pear is not a native of America. The [illegible] Europe [illegible], especially Siberia and North China. [illegible] are offered in one and two-year-old seedlings [illegible] ornamental trees and for breeding winter-hardy pears resistant [illegible] ructive bacterial disease known as fire-blight. (See S. D. [illegible])

1. [illegible] (*Pyrus Ussuriensis*). [illegible] Harbin region, North China, by Dr. N. E. Hansen 1924. [illegible] for $1.00. [illegible]

2. Russian Sand Pear. This is *Pyrus Sinensis* [illegible] has borne abundant fruit for many years. Fruit medium in size, [illegible] culinary use, also for eating when fully ripe. One-year seedlings, two for $1.00. [illegible]

3. Saponsky Ussuriensis Pear. Saponsky Ussuriensis pear, native of [illegible], east Siberia. (See S. D. Bul. 224). Very hardy and free from fire-blight. [illegible] nearly round. Valuable for hybridizing and as ornamental tree. [illegible] Very [illegible]

4. *Pyrus Ovoidea* Pear. This North China pear has borne fruit many years [illegible] this station. (See S. D. Bul. 224). Originally [illegible] as *Pyrus Sinensis*. The bright scarlet leaves [illegible]. Fruit a small pear, [illegible] fair quality. Not quite [illegible] *lensis*) pears. Two-year seedlings of *Pyrus* [illegible]